minus 0.03° and plus 0.05°. The corrected reading, then, is 192.82° at 72.15 °F.

From Table 1:		
193.0° at 72.0 °F.	=	190.2°
192.0° at 72.0 °F.	=	189.1°
Difference	=	1.1°
192.0° at 72.0 °F.	=	189.1°
192.0° at 73.0 °F.	=	188.9°
Difference	=	0.2°

The hydrometer difference (1.1°) multiplied by the fractional degree of the hydrometer reading (0.82°)=0.902.

The temperature difference (0.2°) multiplied by the fractional degree of the temperature reading (0.15°)=0.03°.

Proof at 60° F.=189.1+0.902–0.03=189.972°=190.0°.

As shown, the final proof is rounded to the nearest tenth of a degree of proof. In such cases, if the hundredths decimal is less than five, it will be dropped; if it is five or over, a unit will be added.

(Sec. 201, Pub. L. 85–859, 72 Stat. 1358, as amended (26 U.S.C. 5204))

[T.D. ATF–198, 50 FR 8535, Mar. 1, 1985, as amended by T.D. ATF–381, 61 FR 37004, July 16, 1996]

§ 30.24 Specific gravity hydrometers.

(a) The specific gravity hydrometers furnished by proprietors to appropriate ATF officers shall conform to the standard specifications of the American Society for Testing and Materials (ASTM) for such instruments. Such specific gravity hydrometers shall be of a precision grade, standardization temperature 60 °/60 °F., and provided in the following ranges and subdivisions:

Range	Subdivision
1.0000 to 1.0500	0.0005
1.0500 to 1.1000	0.0005
1.1000 to 1.1500	0.0005
1.1500 to 1.2000	0.0005
1.2000 to 1.2500	0.0005

No instrument shall be in error by more than 0.0005 specific gravity.

(b) A certificate of accuracy prepared by the instrument manufacturer for the instrument shall be furnished to the appropriate ATF officer.

(c) *Incorporation by reference.* The ''Standard Specification for ASTM Hydrometers,'' (E 100–72 (1978)), published in the ''1980 Annual Book of ASTM Standards'' (STP 25 1062 (1980)), is incorporated by reference in this part. This incorporation by reference was approved by the Director of the Federal Register on March 23, 1981. This publication may be inspected at the Office of Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC, and is available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.

(Sec. 201. Pub. L. 85–859, 72 Stat. 1358, as amended (26 U.S.C. 5204); 80 Stat. 383, as amended (5 U.S.C. 552(a)))

[T.D. ATF–198, 50 FR 8535, Mar. 1, 1985, as amended by T.D. ATF–381, 61 FR 37004, July 16, 1996]

§ 30.25 Use of precision specific gravity hydrometers.

The provisions of § 30.23 respecting the care, handling, and use of precision instruments shall be followed with respect to the care, handling, and use of precision grade specific gravity hydrometers. Specific gravity hydrometers shall be read to the nearest subdivision. Because of temperature density relationships and the selection of the standardization temperature of 60 °/60 °F., the specific gravity readings will be greater at temperatures below 60 degrees Fahrenheit and less at temperatures above 60 degress Fahrenheit. Hence, correction of the specific gravity readings will be made for temperature other than 60 degrees Fahrenheit. Such correction may be ascertained by dividing the specific gravity hydrometer reading by the applicable correction factor in Table 7.

Example: The specific gravity hydrometer reading is 1.1525, the thermometer reading is 68 degrees Fahrenheit, and the true proof of the spirits is 115 degrees. The correct specific gravity reading will be ascertained as follows:

(a) From Table 7, the correction factor for 115° proof at 68 °F. is 0.996.

(b) 1.1525 divided by 0.996=1.1571, the corrected specific gravity.

(Sec. 201, Pub. L. 85–859, 72 Stat. 1358, as amended (26 U.S.C. 5204))

Subpart D—Gauging Procedures

§ 30.31 Determination of proof.

(a) *General.* The proof of spirits shall be determined to the nearest tenth degree which shall be the proof used in determining the proof gallons.

(b) *Solids content not more than 600 milligrams.* Except as otherwise authorized by the appropriate ATF officer, the proof of spirits containing not more than 600 milligrams of solids per 100 milliliters of spirits shall be determined by the use of a hydrometer and thermometer in accordance with the provisions of § 30.23 except that if such spirits contain solids in excess of 400 milligrams but not in excess of 600 milligrams per 100 milliliters at gauge proof, there shall be added to the proof so determined the obscuration determined as prescribed in § 30.32.

(c) *Solids content over 600 milligrams.* If such spirits contain solids in excess of 600 milligrams per 100 milliliters at gauge proof, the proof shall be determined on the basis of true proof determined as follows:

(1) By the use of a hydrometer and a thermometer after the spirits have been distilled in a small laboratory still and restored to the original volume and temperature by the addition of pure water to the distillate; or

(2) By a recognized laboratory method which is equal or superior in accuracy to the distillation method.

(d) *Initial proof.* Except when the proof of spirits is used in making the guage prescribed in 27 CFR 19.383 or in making a gauge for determination of tax, the initial determination of proof made on the bonded premises of a distilled spirits plant for such spirits may be used whenever a subsequent gauge is required to be made at that same plant provided that no material has been added to change the proof of the spirits.

(Sec. 201, Pub. L. 85–859, 72 Stat. 1358, as amended, 1362, as amended (26 U.S.C. 5204, 5211))

[T.D. ATF–198, 50 FR 8535, Mar. 1, 1985]

§ 30.32 Determination of proof obscuration.

(a) *General.* Proof obscuration of spirits containing more than 400 but not more than 600 milligrams of solids per 100 milliliters shall be determined by one of the following methods. The evaporation method may be used only for spirits in the range of 80–100 degrees at gauge proof.

(b) *Evaporation method.* Evaporate the water and alcohol from a carefully measured 25 milliliter sample of spirits, dry the residue at 100 degrees centigrade for 30 minutes and then weigh the residue precisely. Multiply the weight of the residue by 4 to determine the weight of solids in 100 milliliters. The resulting weight per 100 milliliters multiplied by 4 will give the obscuration. Experience has shown that 0.1 gram (100 milligrams) of solids per 100 milliliters of spirits in the range of 80–100 degrees proof will obscure the true proof by 0.4 of one degree of proof. For example, if the weight of solids remaining after evaporation of 25 milliliters 0.125 gram, the amount of solids present in 100 milliliters of the spirits is 0.50 gram (4 times 0.125). The obscuration is 4 times 0.50, which is two degrees of proof. This value added to the temperature corrected hydrometer reading will give the true proof.

(c) *Distillation method.* Determine the apparent proof and temperature of the sample of spirits and then distill a carefully measured sample in a small laboratory still, and collect a quantity of the distillate, 1 or 2 milliliters less than the original sample. The distillate is adjusted to the original temperature and restored to the original volume by addition of distilled water. The proof of the restored distillate is then determined by use of a precision hydrometer and thermometer in accordance with the provisions of § 13.23 to the nearest 0.1 degree of proof. The difference between the proof so determined and the apparent proof of the undistilled sample is the obscuration; or

(d) *Pycnometer method.* Determine the specific gravity of the undistilled sample, distill and restore the samples as provided in paragraph (c) of this section and determine the specific gravity of the restored distillate by means of a pycnometer. The specific gravities so obtained will be converted to degrees of proof by interpolation of Table 6 to the nearest 0.1 degree of proof. The difference in proof so obtained is the obscuration.

(Sec. 201, Pub. L. 85–859, 72 Stat. 1358, as amended (26 U.S.C. 5204))

[T.D. ATF–198, 50 FR 8535, Mar. 1, 1985, as amended by T.D. ATF–381, 61 FR 37004, July 16, 1996]